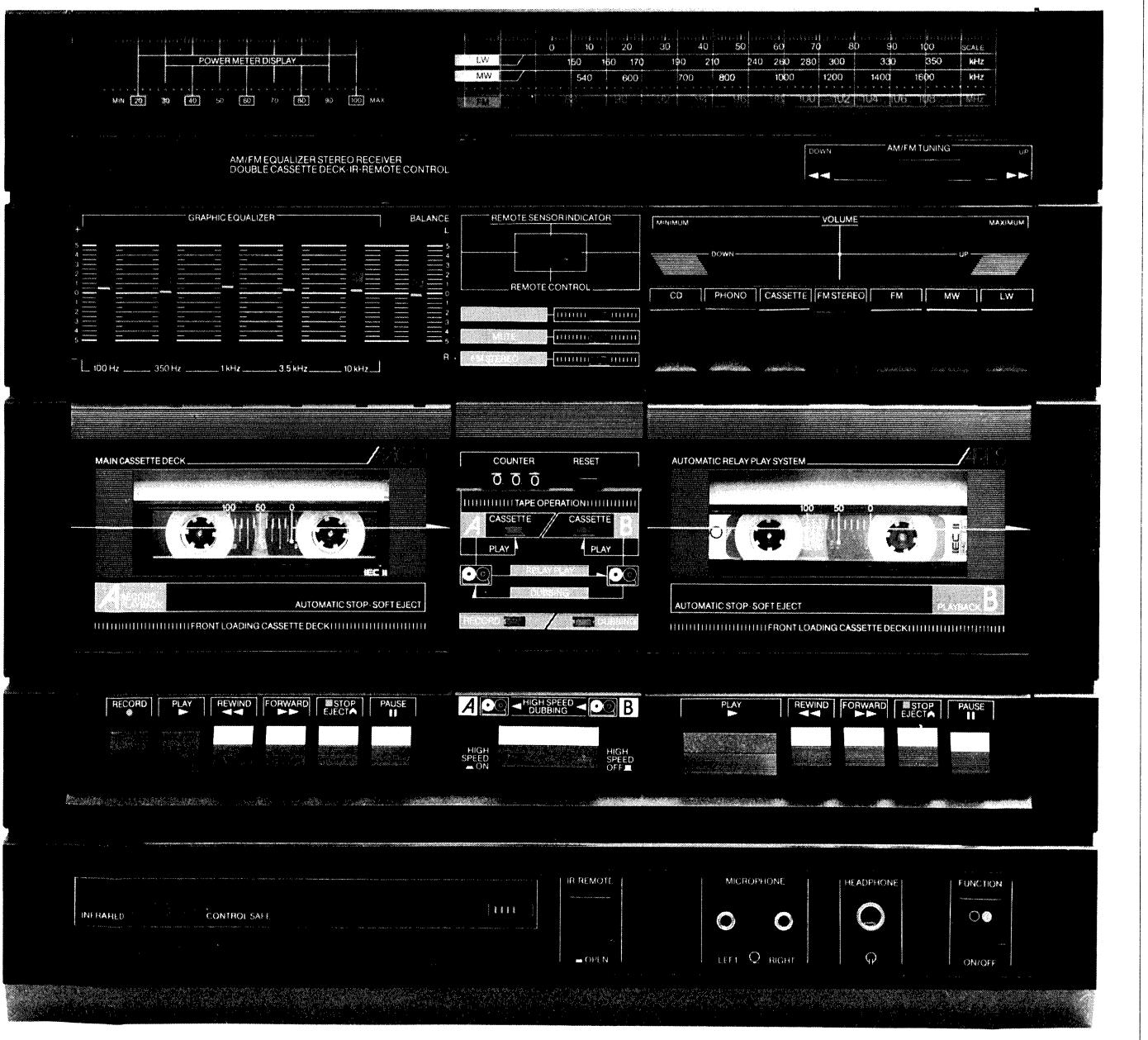
Serviceanweisung

Service manual

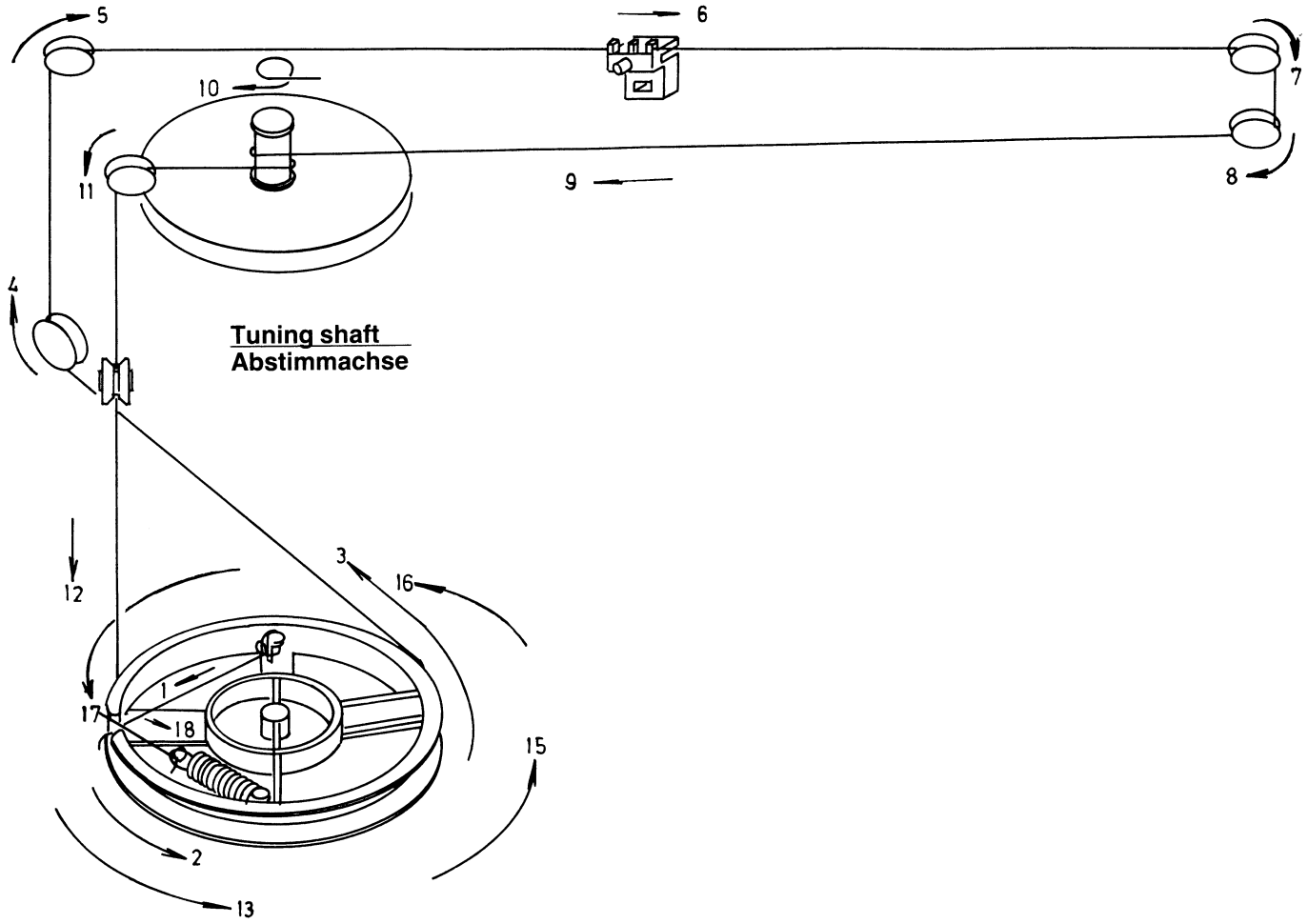
MIDI 2600.5

Ident-Nr. 27 402 00

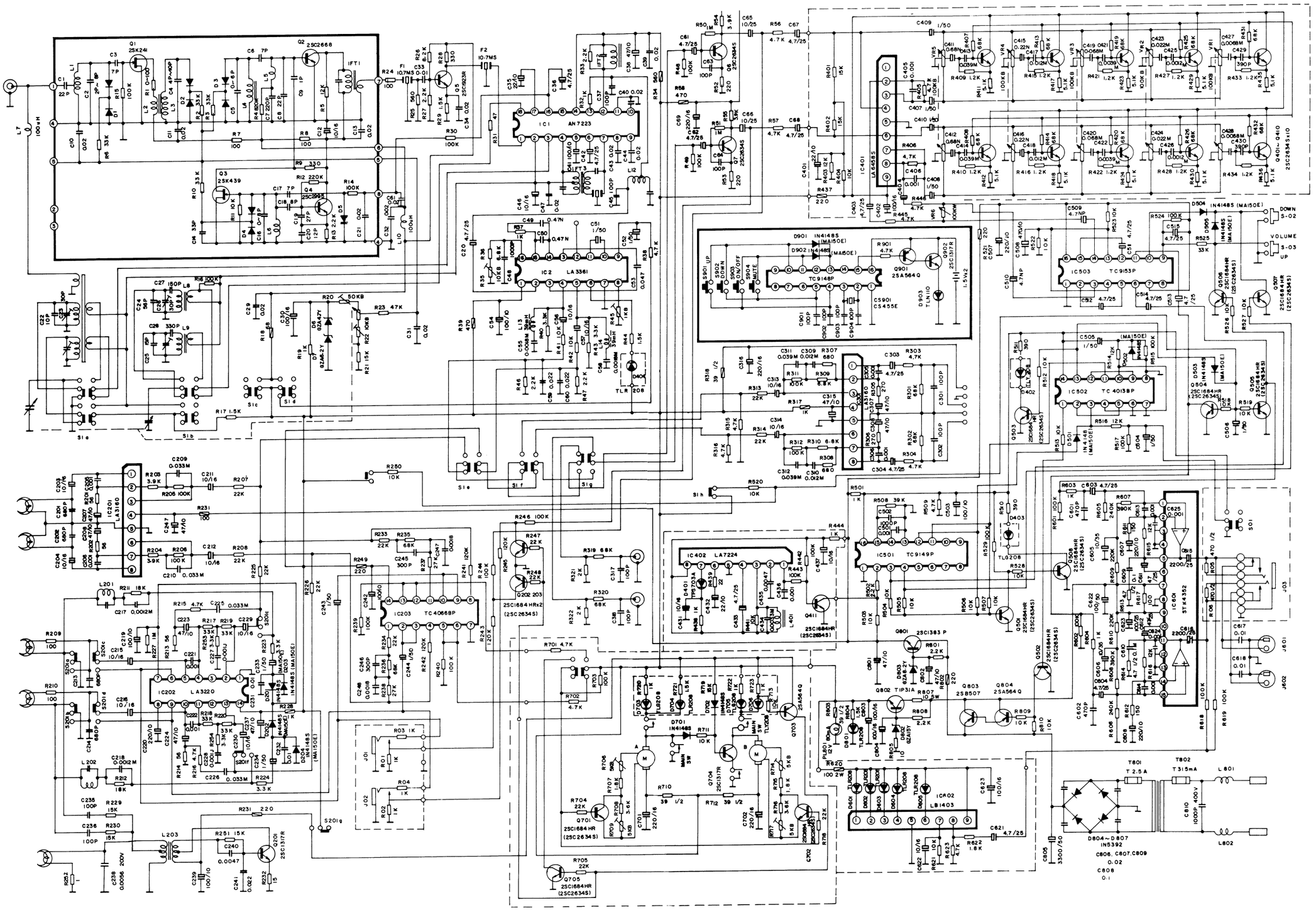
Ident-Nr. 27 400 00 P



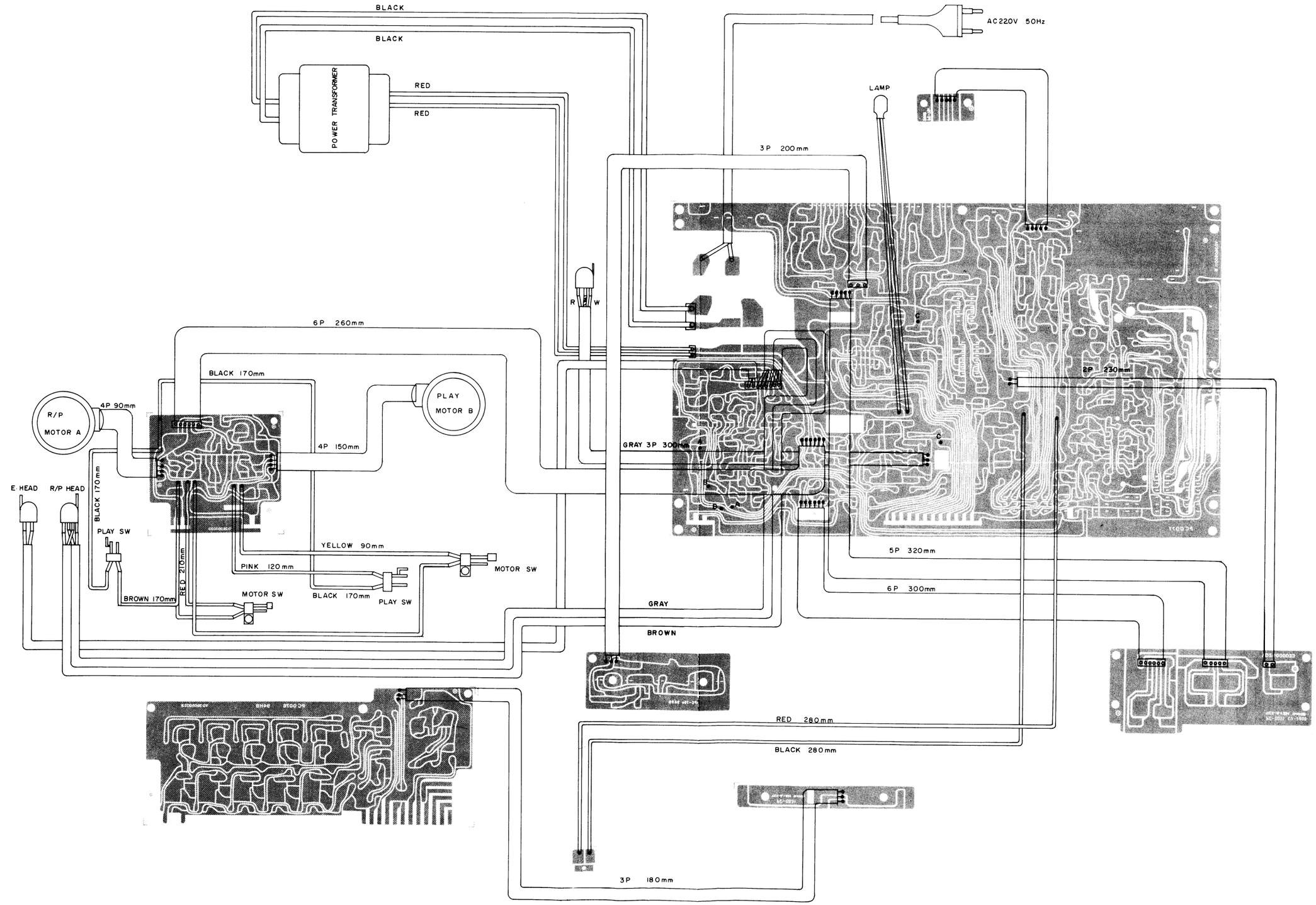
Seilzugführung
Dial stringing diagram



Schaltbild
Circuit diagram



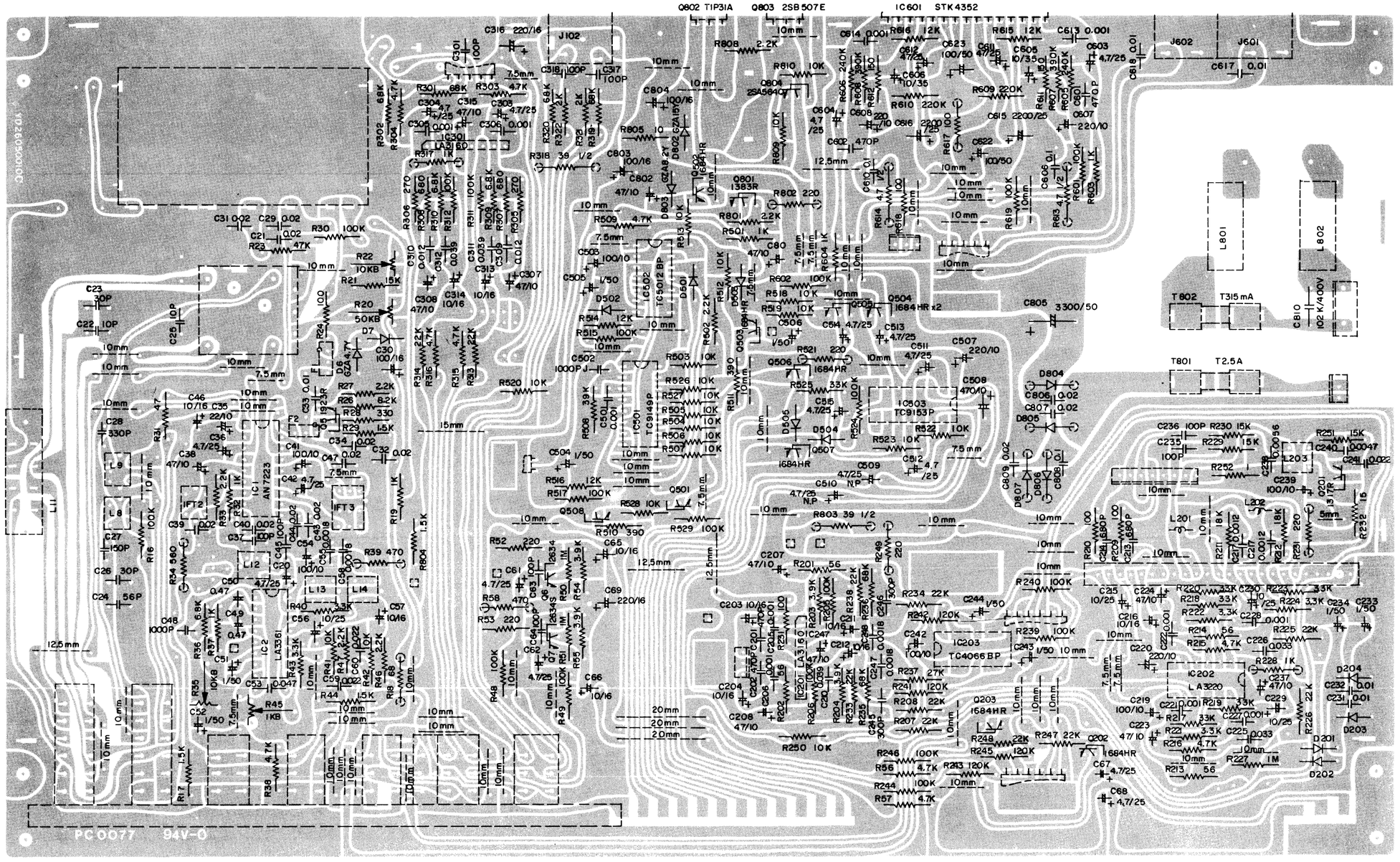
Verdrahtungsplan
Wiring diagram



Grundplatine

Main P.C.B.

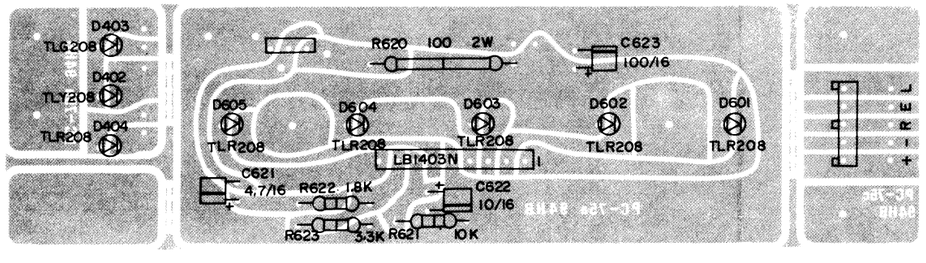
Leiterbahnseite / Bottom view



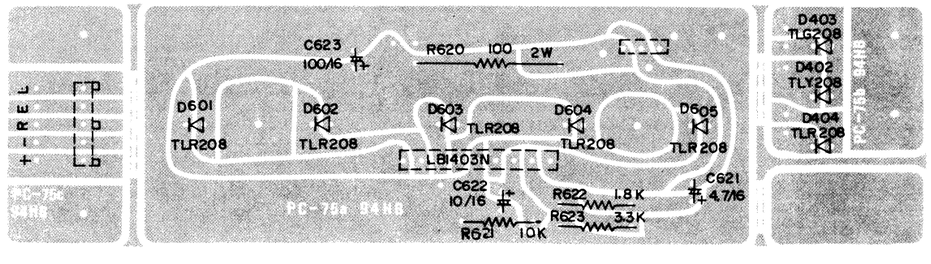
Anzeigeplatinen

Indication P.C.B.'s

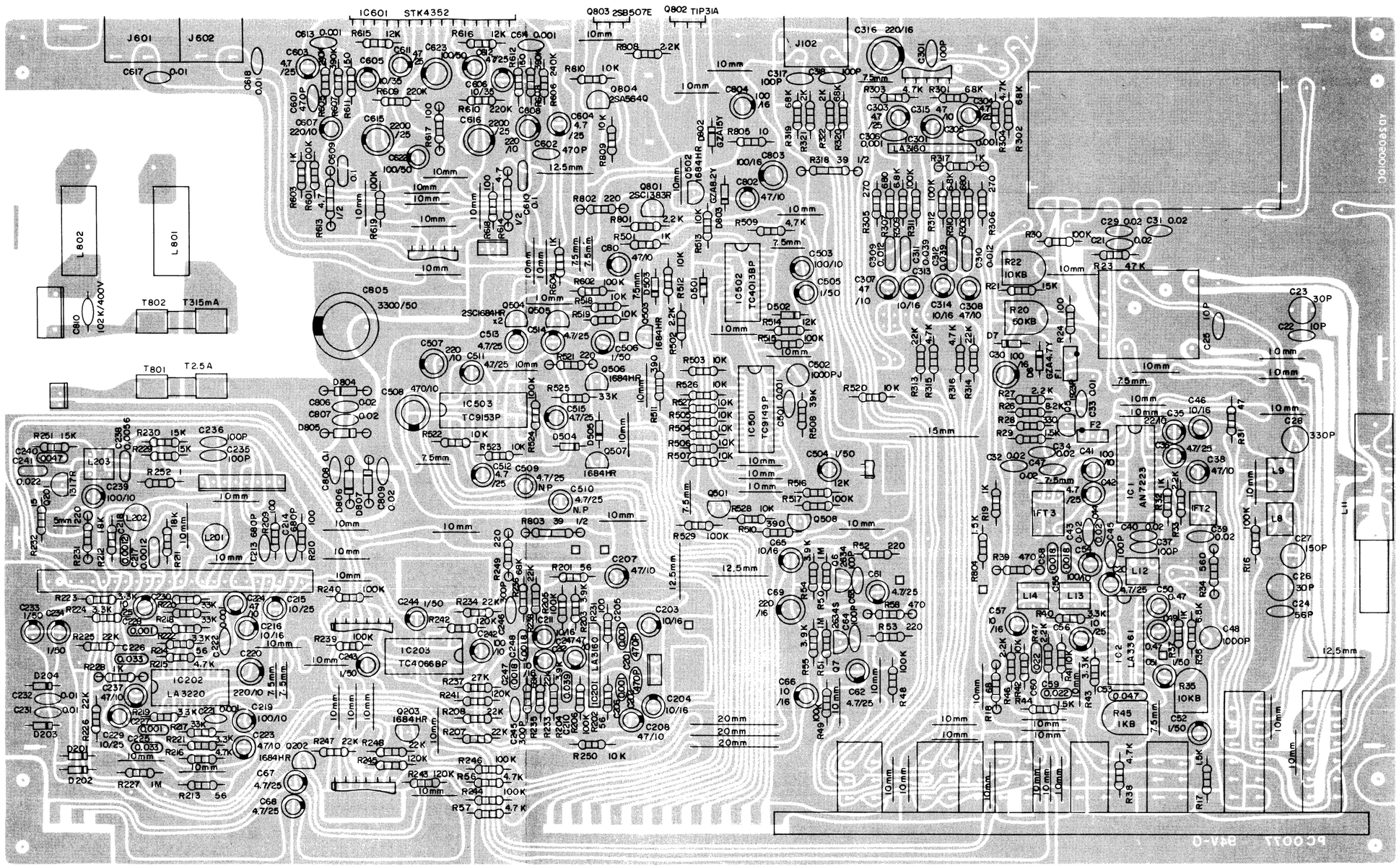
Bestückungsseite / Top view



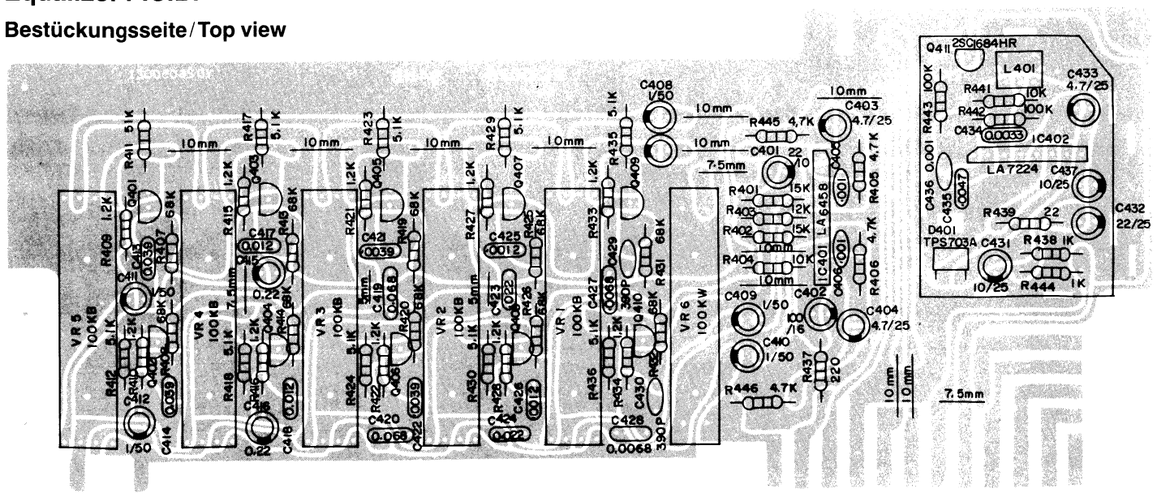
Leiterbahnseite / Bottom view



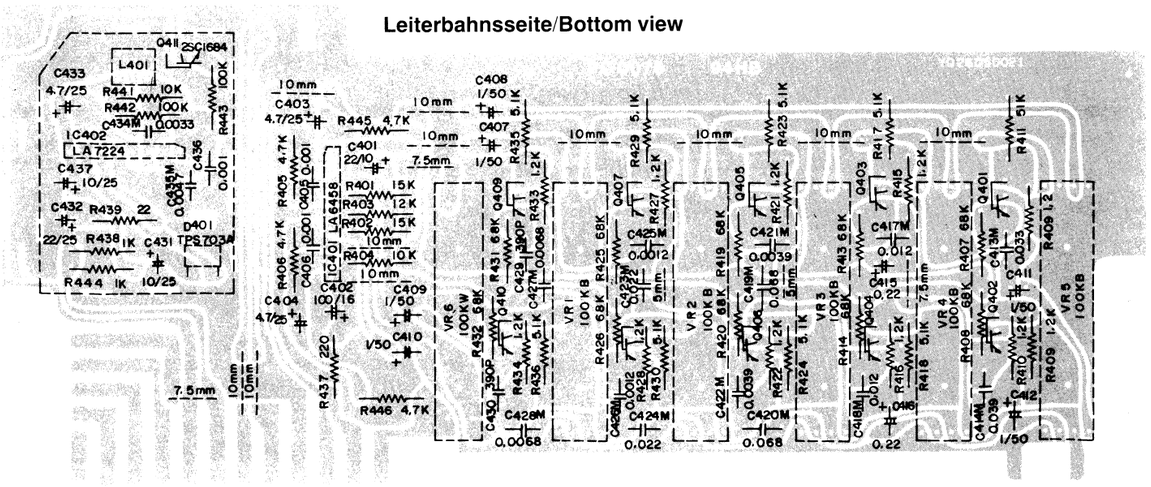
Grundplatine
Main P.C.B.
Bestückungsseite / Top view



Equalizerplatine
Equalizer P.C.B.
Bestückungsseite / Top view



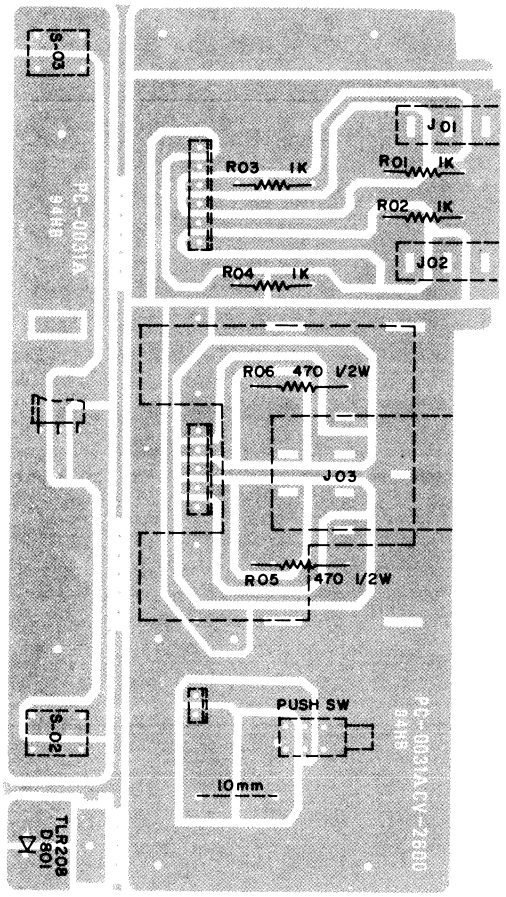
Leiterbahnsseite / Bottom view



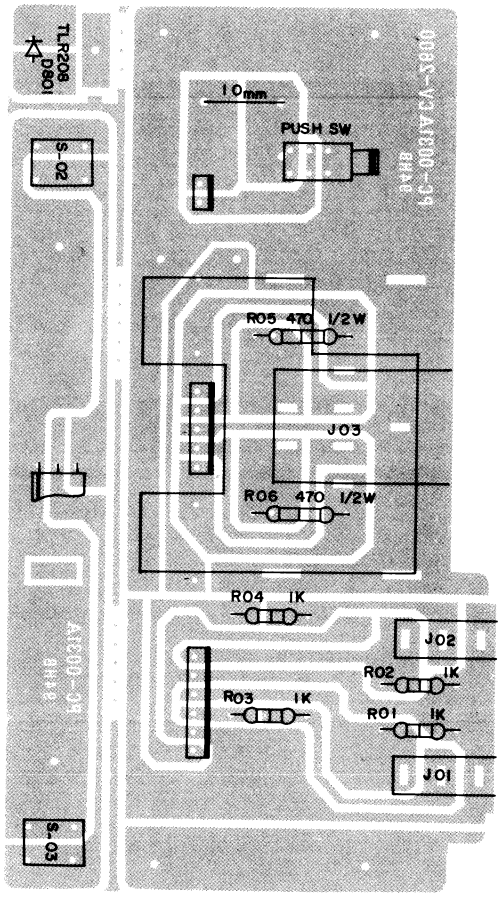
Buchsenplatinen

Jack P.C.B.'s

Bestückungsseite / Top view



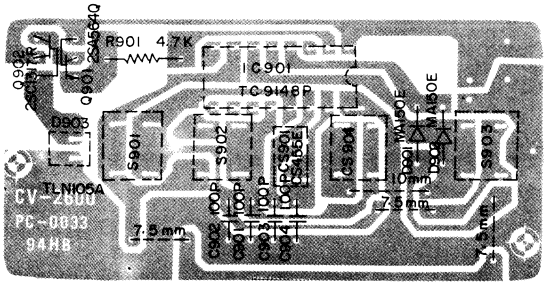
Leiterbahnseite / Bottom view



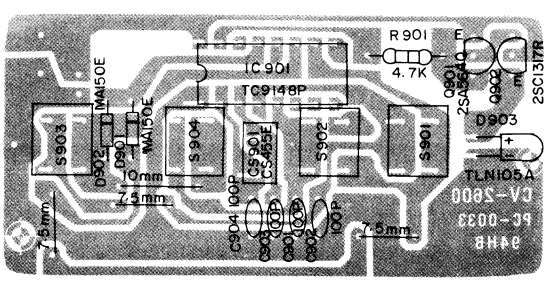
Fernbedienungsplatine

Remote control P.C.B.

Bestückungsseite / Top view



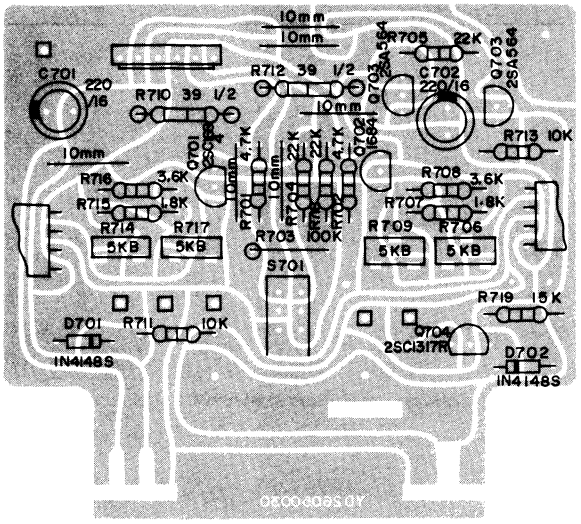
Leiterbahnseite / Bottom view



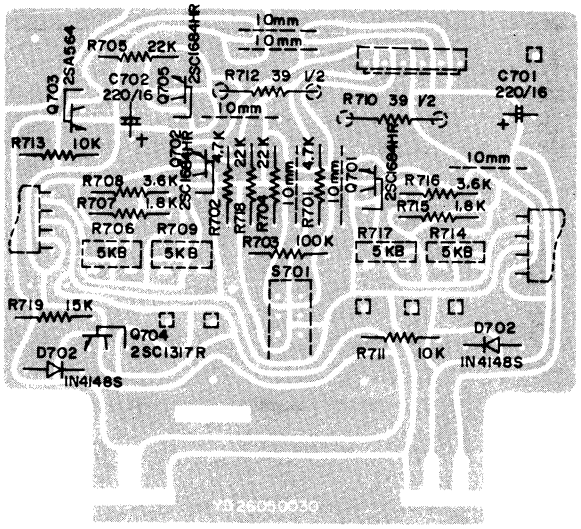
Schalterplatine Dubbing

Dubbing switch P.C.B.

Bestückungsseite / Top view



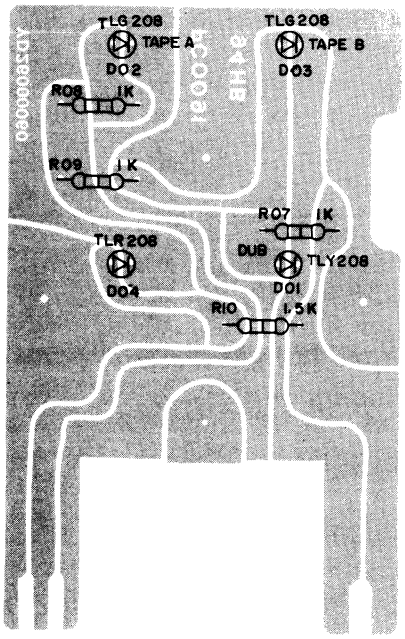
Leiterbahnseite / Bottom view



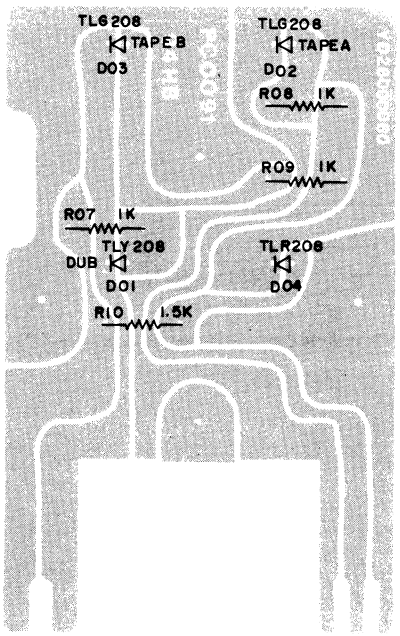
Cassette LED-Platine

Tape LED P.C.B.

Bestückungsseite / Top view



Leiterbahnseite / Bottom view



ALIGNMENT PROCEDURE

GENERAL ALIGNMENT CONDITIONS

1. Signal input must be kept as low as possible to avoid overload and clipping. (Use highest possible sensitivity of output indicator.)
2. Signal input should be kept as low as possible to avoid A.G.C. action. (Set output indicator to highest sensitivity.)
3. Marker insertion and amplitude should not distort the oscillator and amplitude should not distort the oscilloscope trace.
4. Standard modulation is 1 KHZ 30%.

INSTRUMENTS REQUIRED

Signal source

* AM signal generator *
* Radio sweep generator *
* Sweep oscilloscope *
* Output indicators *
* AC millivolt meter *
* Oscilloscope *

STEP	CONNECT SIGNAL SOURCE TO -	CONNECT OUTPUT INDICATOR -	SET SIGNAL OR INSERT MARKER	SET RADIO DIAL TO -	ADJUST	ADJUST FOR -
1	Set function selector switch on the front panel to MW position					
2	Sweep generator connected to a loop or short piece of wire placed near MW antenna	Sweep oscilloscope connected to wire pin of the C703 or C704 and volume to maximum	See amplitude of 460 KHZ	Quite point on band near 515 KHz	IFT 3	
3	Signal generator connected to a loop	AC millivolt meter and oscilloscope connected across speaker	515 KHz	Scale - 0	MW OSC L - 9	Maximum
4			1620 KHz	Scale - 100	Trimmer TC - 2	
5			600 KHz	600 KHz	MW ANT COIL L 11	
6			1400 KHz	1400 KHz	RF Trimmer TC - 1	
7	Repeat step 3 through 6 as necessary to obtain maximum sensitivity on station.					
8	Set function selector switch on the front panel to LW position.					
9	Signal generator connected to a loop antenna	AC millivolt meter and oscilloscope connected across speaker	145 KHz	Scale - 0	LW OSC L 8	Maximum
10			350 KHz	Scale - 15	C 26	
11			170 KHz	170 KHz	LW ANT COIL L 11	
12			330 KHz	330 KHz	C 23	
13	Repeat steps 8 through 13 as necessary to obtain maximum sensitivity on station.					

GENERAL ALIGNMENT CONDITION

1. Signal input must be kept as low as possible to avoid overload alipping. (Use highest possible sensitivity of output indicator.)
2. Marker must be accurate (crystal controlled or calibrated). The 10.7 MHz marker used in each sention of the FM alignment must be the same.
3. Signal input hsould be kept as low as possible to avoid AGC action. (Set output indicator to highest sensitivity.)
4. FM signal generator RF output frequency must be monitoring.
5. Standard modulation is 1 KHz 30% (22.5 KHz).

INSTRUMENTS REQUIRED

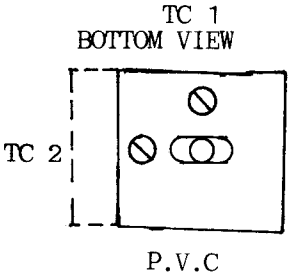
Signal sources

* FM signal generator *
* Radio sweep generator *
* Sweep oscilloscope *
* Frequency counter *

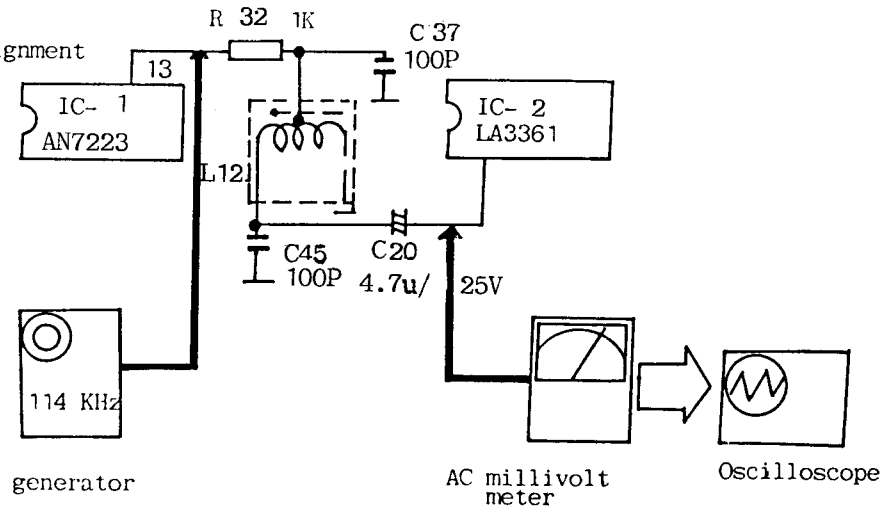
* Output indicators *
* AC millivolt meter *
* Oscilloscope *
* 114 KHz signal generator *

STEP	CONNECT SIGNAL SOURCE TO -	CONNECT OUTPUT INDICATOR TO -	SET SIGNAL OR INSERT MARKER	SET RADIO DIAL TO -	ADJUST	ADJUST FOR -
1	Set function selector switch on the front panel to " FM " position.					
2	Radio sweep generator connect to C 105	Oscilloscope connected to wire pin of the C 603 or C 604 and volume VR to maximum	10.7 MHz	Quite scale pointer on band	T 1	Maximum gain with symmetical curve peaked at 10.7 MHz marker
3			10.6 10.7 10.8 MHz marker		IFT 2	Straightness and symmentry of "S" curve with 10.7 MHz marker at zero crossover
4	Repeat steps 2 thorugh 3 as necessary to obtain maximum gain and selectivity.					
5	FM signal generator output coupled to FM aerial. Steps 5,6 frequency must be monitored by frequency counter	AC millivolt meter and oscilloscope connected across loadspeaker socket.	87.35 MHz	Scale - 0	R 22	Maximum
6			108.25 MHz	Scale - 100	R 20	
7			90 MHz			
8			106 MHz			

STEP	CONNECT SIGNAL SOURCE TO-	CONNECT OUTPUT INDICATOR TO-	SET SIGNAL OR INSERT MARKER	SET RADIO DIAL TO	ADJUST	ADJUST FOR -
9	Repeat steps 5 through 8 as necessary to obtain maximum sensitivity.					
10	114 KHz signal generator output coupled to IC 101 pin 13	AC millivolt meter and oscilloscope connected to IC102 pin 2.	114 KHz	No need	L 12	Minimum



114 KHz trap coil alignment



GENERAL ALIGNMENT CONDITION

1. Adjust FM signal generator output to 1mV (60dB) with MPX modulation 1 KHz
   Deviation ≙ 40 KHz Pilot = 6 KHz

INSTRUMENTS REQUIRED

Signal source

* FM signal generator *
* Stereo Signal generator *

Output indicator

* Frequency counter *
* AC millivolt meter *
* Oscilloscope *

STEP	CONNECT SIGNAL SOURCE TO -	CONNECT OUTPUT INDICATOR TO -	SET SIGNAL	SET RADIO DIAL	ADJUST	ADJUST FOR -
1	Set function selector switch on the front panel to "FM Stereo" position.					
2.	FM signal generator connected to FM aerial	Frequency counter connect to MPX test point	98 MHz and modulation off, pilot signal off too.	98 MHz	R 35	19.00 KHz +/- 50 Hz
3.		AC millivolt meter connected to loadspeaker socket L and R	98 MHz	98 MHz	R 45	Until more than 25dB of separation is obtained between the R and L channels

CASSETTE TAPE

INSTRUMENT REQUIRED

1. Audio signal generator.
2. Audio attenuator (600 OHM).
3. Dual trace oscilloscope.
4. Dual trace AC millivolt meter.
5. Frequency counter.

ADJUSTMENT

1. Playback

STEP		MEASURING INSTRUMENT ARRANGEMENT	TEST TAPE	ADJUST POINT	ADJUSTMENT
1	Azimuth and phase	Take out the signal from loadspeaker socket L and R	MTT - 114 (10 KHz - 10dB)	R/P head	Adjust to maximum output and synchonize phase
2	Tape speed		MTT - 111 (3 KHz - 10dB)	Motor	R709, R717 adjust to 4.8KHz + 3/-2% at frequency counter display. R706. R714 adjust to 3 KHz +3/-2% at frequency counter display.
3	Output level setting		MTT - 212E		First, use tape 1 to adjust output voltage of left side to same as right side, then check tape 2, wheater the difference is within +/- 3dB

2. Rec

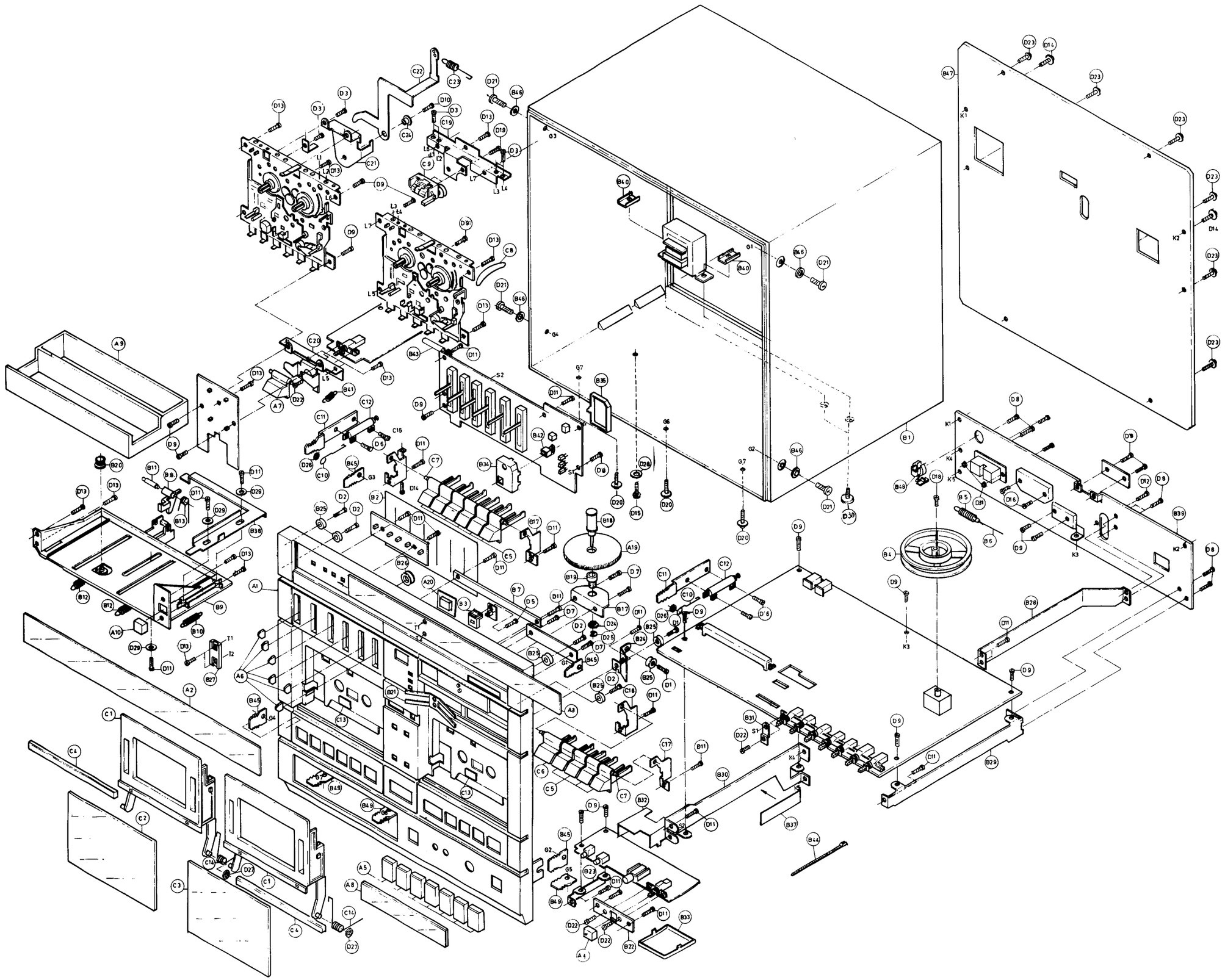
STEP		MEASURING INSTRUMENT ARRANGEMENT	OUTPUT POINT	OUTPUT POINT	ADJUSTMENT
1	Bias frequency	Frequency counter connect to erase head wire pin	Erase head wire pin	L 203	85 KHz (± 5 KHz)

Bestell-Nr./Part No.	Bezeichnung	Description	Position
12 036 00-301	Transistor 2 SA 564		Q 804, 901, 703
32 959 00-301	Transistor 2 SB 507 E		Q 803
03 728 00-301	Transistor 2 SC 1317 QR		Q 201, 704, 902
03 713 00-301	Transistor 2 SC 1383 S		Q 801
13 944 00-301	Transistor 2 SC 1684 S		Q 202, 203, 401, 411, 501–508, 701, 702, 705
14 083 00-301	Transistor 2 SC 1923 R		Q 5
24 533 00-301	Transistor 2 SC 2634 S		Q 6, 7, 202, 203, 401–411, 501–508, 701, 702, 705
21 411 00-301	Transistor TIP 31 A		Q 802
24 362 00-302	IC AN 7223		IC 1
13 943 00-302	IC LA 3160 T		IC 201, 301
15 376 00-302	IC LA 3220		IC 202
21 596 00-302	IC LA 3361		IC 2
26 872 00-302	IC LA 6458 S		IC 401
34 563 00-302	IC LA 7224		IC 402
26 476 00-302	IC LB 1403 N		IC 602
24 363 00-302	IC STK 4352		IC 601
26 131 00-302	IC TC 4013 BP		IC 502
26 809 00-302	IC TC 9148 P		IC 901
29 836 00-302	IC TC 9149 P		IC 501
26 806 00-302	IC TC 9143 P		IC 503
32 998 00-302	IC TC 4066 BP		IC 203
11 241 00-3041	Diode 1 N 4148		D 201–204, 501–504, 701, 702, 901, 902
32 931 00-305	Gleichrichter IN 5392	Rectifier IN 5392	D 804–807
22 956 00-3044	Diode GZA 4,7 Y		D 6
21 350 00-3044	Diode GZA 6,2 Y		D 7
13 577 00-3044	Zenerdiode GZA 8.2		D 803
21 413 00-3044	Zenerdiode GZA 15		D 802
32 932 00-3045	Leuchtdiode TLR 208 rot	LED TLR 208 red	D 04, 404, 601–605, 801
32 933 00-3045	Leuchtdiode TLY 208 gelb	LED TLY 208 yellow	D 01, 402
29 241 00-3045	Leuchtdiode TLG 208 grün	LED TLG 208 green	D 02, 03, 403
32 332 00-3046	Diode IR-Sender TLN 110	Diode TLN 110 IR	D 903
26 819 00-3046	Diode IR-Empfänger TPS 703	Diode IR receiver TPS 703	D 401
29 847 00-502	UKW-Teil FE 407-E 39	UKW unit	
34 319 00-3431	Ferritantenne	Bar antenna coil	L 11
24 375 00-3252	Filter Keramik FM	FM Ceramic filter	F 1, 2
34 564 00-3252	Filter Keramik AM	AM Filter ceramic	IFT 3
32 342 00-3252	Filter Keramik CSB 455 E	Filter ceramic CSB 455 E	CS 901
34 320 00-3251	Drossel 100 µH	Inductor 100 µH	L 7, 10
34 322 00-3253	Spule 39 mH	Coil 39 mH	L 13, 14
24 370 00-3253	Spule FM	FM DET coil	IFT 2
24 369 00-3253	Spule AM-Osz.	MW Osc. coil	L 9
24 368 00-3253	Spule LW-Osz.	LW Osc. coil	L 8
24 372 00-3253	Spule AM	Unti birdy coil	L 12
34 325 00-3253	Oszillatorspule Cass.	Tape osc. coil	L 203
34 326 00-3253	Spule	Tape trap coil	L 201, 202
29 941 00-3252	Spule Netzleitung	Line filter	L 801, 802
32 939 00-3273	Netzschalter	Function switch	
34 331 00-3274	A/W-Schiebeschalter	R/P switch	S 201
34 565 00-3274	Schiebeschalter Dubbing	Push switch dubbing	S 701
34 566 00-3276	Tastensatz 7fach	Key set (7 switch)	S 1
32 943 00-3277	Tipptaste Volume	Tact switch volume	S 2, 3
32 944 00-327	Mikroschalter Record	Leaf switch record	
34 567 00-502	Equalizerplatine	Graphic eq. P.C.B.	
34 568 00-502	Dubbingschalterplatine	Dubbing sw. P.C.B.	
34 569 00-502	Anzeigeplatine Cass.	Tape LED P.C.B	
32 948 00-502	Anzeigeplatine Power/Stereo/FB	Meter/LED/Connector P.C.B.	
34 570 00-502	Grundplatine	Main P.C.B.	
34 571 00-3222	Schieberegler Equalizer	Slide potentiometer equalizer	VR 401–405
34 572 00-3222	Schieberegler Balance	Slide potentiometer balance	VR 406
34 573 00-3243	Netztrafo	Power transformer	
34 574 00-317	Drehkondensator	PVC	PVC 1
24 377 00-3171	Trimmer-Kondensator	Trimmer capacitor	C 23, 26
32 954 00-3291	Lampe 12 V 80 MA	Pilot lamp 12 V 80 MA	
13 653 00-3321	Buchse Antenne	Antenna jack	
32 952 00-3329	Buchse Chinch CD	2-pin RCA jack CD	J 102
13 987 00-3326	Buchse Mikrofon	Microphone jack	
13 986 00-3324	Buchse Kopfhörer	Headphone jack	
34 338 00-3325	Buchse Lautsprecher	Speaker jack	
34 575 00-3329	Buchse 5pol. Phono	5-pin connector phono	

Notizen:
Notes:

Bestell-Nr./Part No.	Bezeichnung	Description	Position
34 558 00-5903	Frontteil	Front panel	A 1
32 881 00-4251	Skalenabdeckung	Dial window	A 2
34 559 00-4251	Skalenscheibe	Dial plate	A 3
32 883 00-4282	Knopf Taste Netz	Function on/off button	A 4
34 560 00-4282	Knopf Taste Funktion	Function button	A 5
32 885 00-4284	Knopf Schieberegler	Slide knob	A 6
32 886 00-4282	Klaviertaste Dubbing	Dubbing key	A 7
32 887 00-4282	Tipptaste Volume	VR button	A 8
32 888 00-4299	Fach Fernbedienung	RC housing	A 9
32 889 00-4282	Knopf Taste Fach FB	Eject button	A 10
32 891 00-4281	Knopf Abstimm	Tuning knob	A 19
32 892 00-4253	Fenster FB-Sensor	RC window	A 20
32 893 00-5053	Gehäuse	Wooden cabinet	B 1
32 894 00-4271	Skalenzeiger	Dial pointer	B 3
32 895 00-4273	Seilrad	Dial drum	B 4
32 896 00-4162	Zugfeder Skalenseil	Dial drum spring sus	B 5
32 897 00-42945	Raster FB-Fach	Housing lock	B 8
32 898 00-4162	Zugfeder Knopf FB-Fach	RC eject spring	B 10
32 899 00-4162	Zugfeder FB-Fach	RC lever open spring	B 12
32 911 00-4163	Feder Raster FB-Fach	RC open spring	B 13
32 912 00-418	Abstimmachse	Tuning shaft	B 18
32 913 00-409	Mutter für Abstimmachse	Tun. bush	B 19
32 914 00-429	Zahnrad FB-Fach	Damper gear	B 20
12 053 00-4294	Seilrolle	Pulley	B 25
32 915 00-4162	Zugfederknopf Dubbing	Dubbing key spring	B 41
34 561 00-431	Rückwand	Back board	B 47
32 917 00-429	Cassettenfach	Cass. case	C 1
32 918 00-429	Cassettenfachabdeckung A	Cass. window (1)	C 2
32 919 00-429	Cassettenfachabdeckung B	Cass. window (2)	C 3
32 920 00-429	Zierstreifen	Cass. dec., P D	C 4
32 921 00-4282	Klaviertaste Play breit	Cass. key (play)	C 5
32 922 00-4282	Klaviertaste Cassette	Cass. key (rew)	C 6
32 923 00-4152	Zählwerkriemen	Counter belt	C 8
32 924 00-4272	Zählwerk	Tape counter	C 9
32 925 00-416	Feder Fachdämpfung	Damper bar	C 10
32 926 00-501	Fachdämpfung	Damper assembly	C 12
32 927 00-416	Feder Cassettenfach	Cass. open spring	C 14
34 562 00-416	Feder A/W-Schalter	Rec. spring	C 23
32 890 00-3503	Fernbedienungsgeber	Remote control	
34 594 00-213	Styroporverpackung o. B.	Polyfoam packing without speakers	

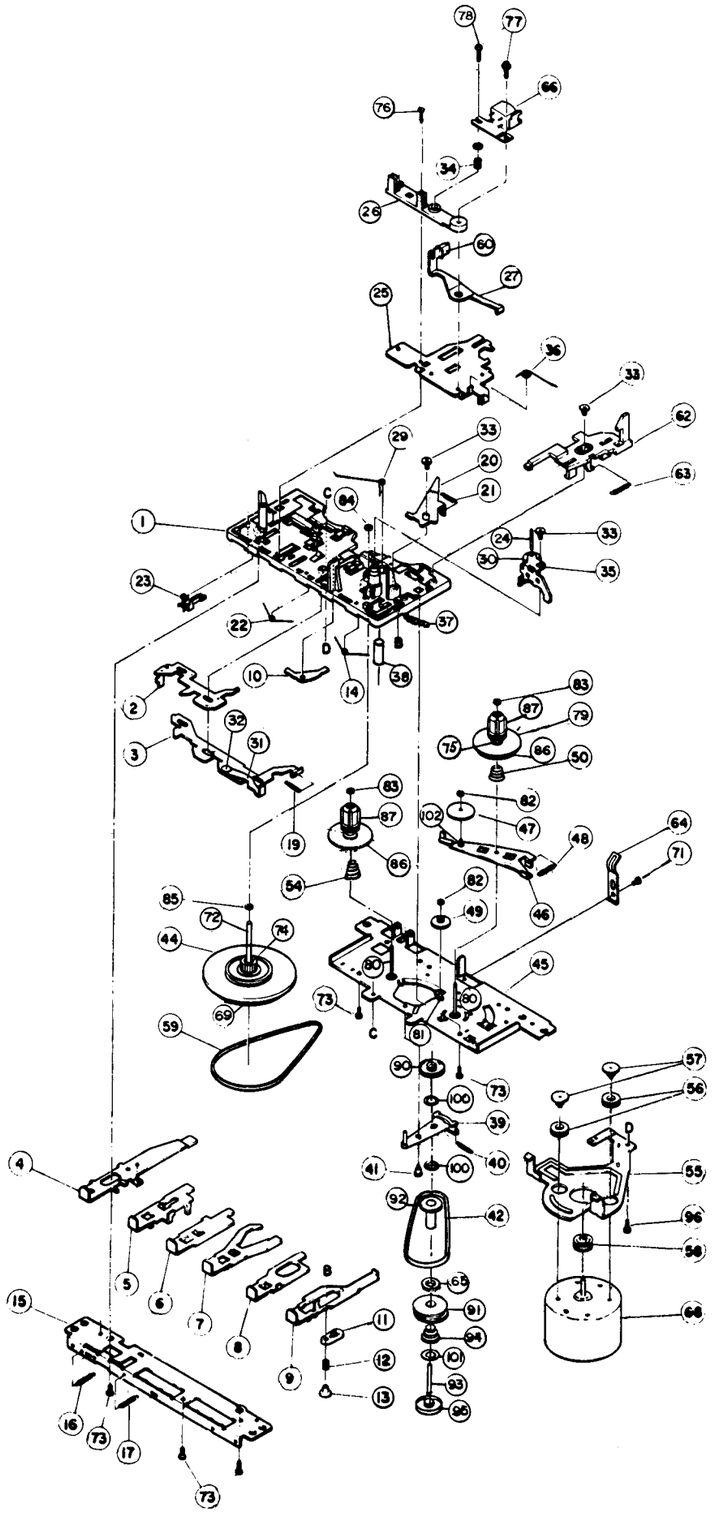
Explosionsdarstellung
Exploded view



Explosionsdarstellung
Exploded view

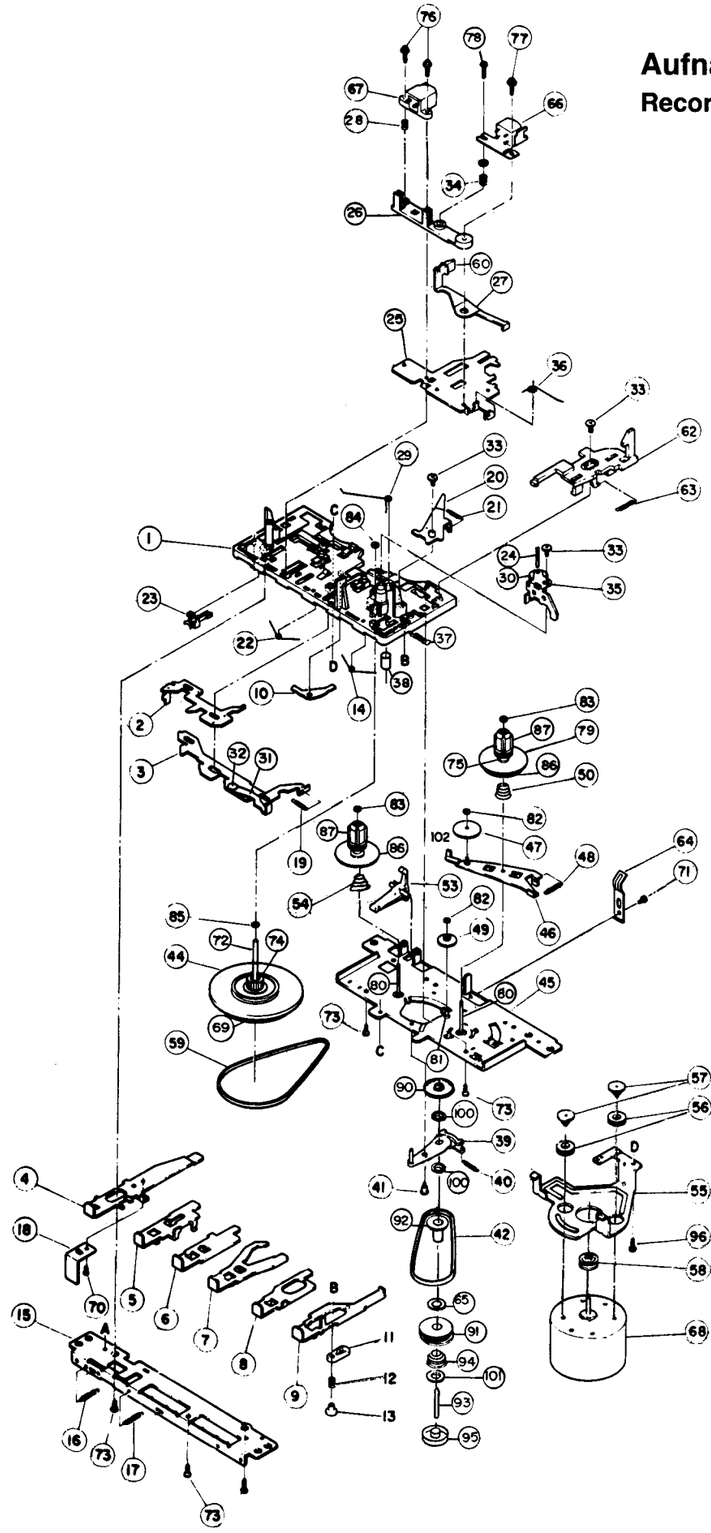
Cassette B

Wiedergabe
Playback



Cassette A

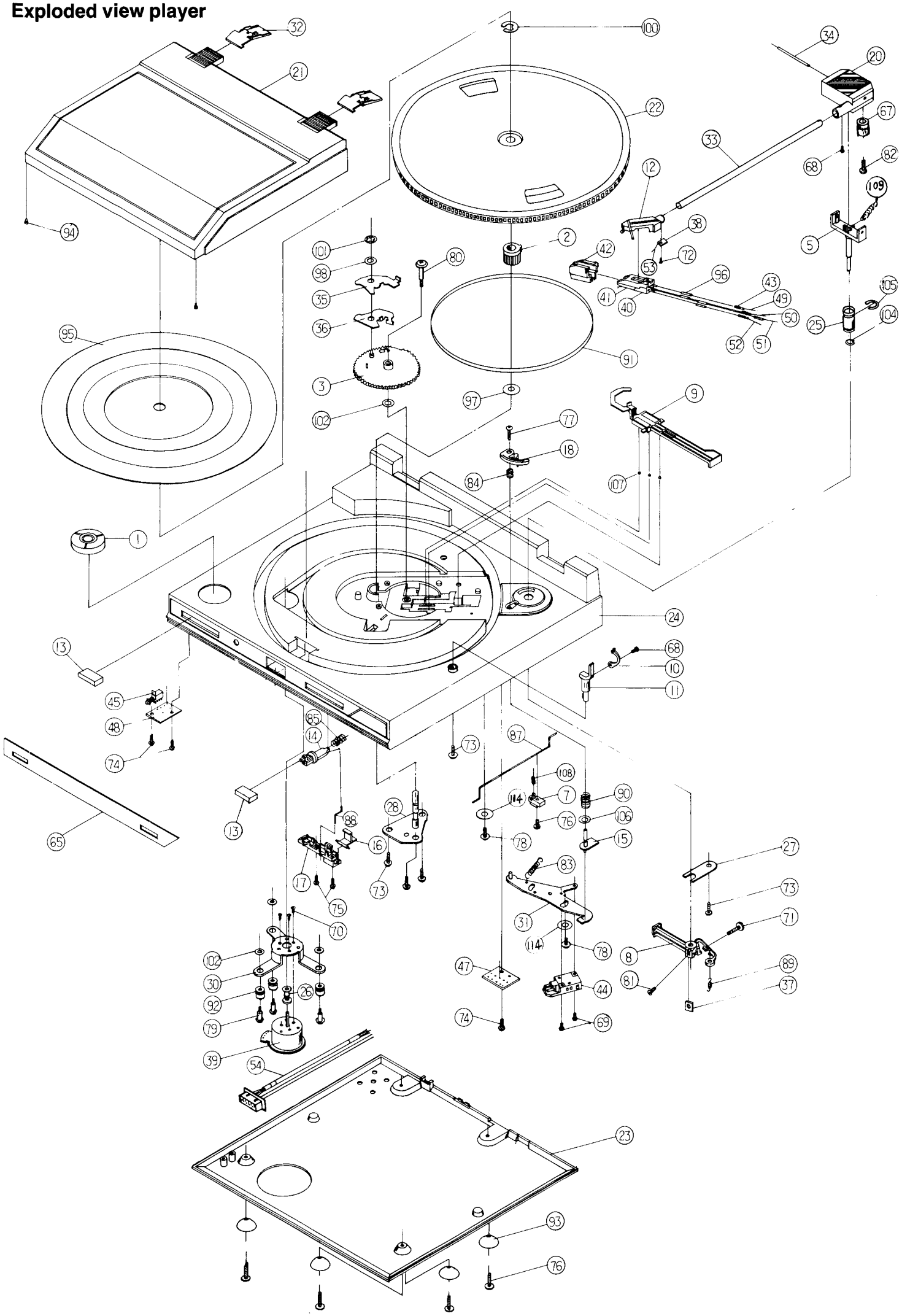
Aufnahme / Wiedergabe
Record / Playback



Bestell-Nr./Part No.	Bezeichnung	Description	Position
34 576 00-501	**Cassettenmechanik A/W**	**Cassette mechanism Rec./PB**	
34 577 00-501	**Cassettenmechanik Wiedergabe**	**Cassette mechanism playback**	
32 420 00-419	Pausenrasthebel	Pause lever	11
32 421 00-4161	Feder Pausenrasthebel	Pause lever spring	12
32 422 00-429	Stopper Pausenrasthebel	Pause stopper	13
32 423 00-4163	Feder Tastenhebel (Stop, Pause)	Button lever spring (pause, stop)	14
32 424 00-4161	Feder Aufnahmehebel	Record lever spring	16
32 425 00-4161	Feder Starthebel	Play button lever spring	17
32 426 00-4161	Feder Auslösehebel	Actuation spring	19
32 427 00-4161	Feder Hebel	Auto lever spring	21
32 428 00-4163	Feder Tastenhebel (Vor-, Rücklauf)	Button lever spring (FF, rewind)	22
32 874 00-327	Mikroschalter Play	Leaf switch	23
32 430 00-4294	Kopfträger	Head base	26
32 474 00-4294	Kopfträger Wiedergabe	Headbase playback	26
32 431 00-4197	Stophebel kpl.	Sensing plate assembly	27 + 60
32 432 00-4161	Feder Löschkopf	Spring erase head	28
32 433 00-4163	Feder Kopfträgerplatte	Head panel spring	29
32 434 00-4019	Schraube BA-Rolle	Screw pinch roller	33
32 435 00-4161	Feder A/W-Kopf	Spring R/P head	34
32 436 00-429	Bandandruckrolle kpl.	Pinch roller assembly	35 + 30 + 24
32 437 00-4163	Feder BA-Rolle	Pinch roller spring	36
34 347 00-4161	Feder Auslösehebel	Spring actuator lever	37
32 438 00-4299	Rutschkupplung kpl.	Clutch arm assembly	39
32 439 00-416	Feder Rutschkupplung	Clutch arm spring	40
32 440 00-4019	Schraube Rutschkupplung	Clutch arm screw	41
34 205 00-4152	Riemen Rutschkupplung	Clutch arm belt	42
32 442 00-4189	Schwungmasse	Flywheel assembly	44 + 69 + 72 + 74 + 85
32 444 00-4197	Zwischenradzahnradarm	Take-up gear plate	46
32 445 00-429	Zwischenzahnrad	Take-up gear	47
32 446 00-4162	Feder Zwischenzahnrad	Take-up gear spring	48
32 447 00-429	Zahnrad Vorlauf	FF gear	49
32 448 00-4161	Feder Wickelteller rechts	Back tension spring right	50
32 449 00-429	Wickelteller links	Supply reel	
32 450 00-429	Wickelteller rechts	Take-up reel	
32 451 00-4197	Aufnahmesperrhebel	Record safety lever	53
32 452 00-4161	Feder Wickelteller links	Back tension spring left	54
32 453 00-4151	Gummipuffer Motor	Motor rubber	56
32 454 00-4019	Schraube Motor	Motor collar screw	57
32 876 00-429	Motorpulley	Motor pulley	58
32 456 00-4152	Antriebsriemen	Main belt	59
32 457 00-429	Gleithebel Eject	Eject slide lever	62
32 458 00-4162	Feder Hebel Eject	Eject slide lever spring	63
32 459 00-4164	Cassettenandruckfeder	Pack spring	64
34 384 00-32831	Wiedergabekopf	Play head	66
34 578 00-32831	A/W-Kopf	R.P. head	66
34 579 00-32831	Löschkopf	Erase head	67
34 350 00-3282	Motor	Motor	68
32 460 00-407	Sicherungsscheibe Zahnrad	Polyslider washer gear	82
32 461 00-407	Sicherungsscheibe Wickelteller	Polyslider washer reel	83
32 462 00-407	Sicherungsscheibe Schwungmasse	Polyslider washer flywheel	84
32 463 00-327	Microschalter Start	Leafswitch play	98

Explosionsdarstellung Plattenspieler

Exploded view player



Bestell-Nr./Part No.	Bezeichnung	Description	Position
27 400 00-620	**Plattenspieler kpl. SBD 53**	**Record player cpl. SBD 53**	
32 817 00-49092	Zentrierstück	RPM adaptor	1
32 818 00-49092	Kurvenrad	Cam gear	3
32 819 00-49092	Tonarmlager	Rotary shaft set	5
32 820 00-49092	Rücksetzhebel	Return link	8
32 821 00-49092	Schaltschieber	Starting lever	9
32 822 00-49092	Clip Tonarmstütze	Pick-up cramper	10
32 823 00-49092	Tonarmstütze	Pick-up stand	11
34 580 00-49092	Tonarmkopf	Headshell	12
32 825 00-49092	Knopf Taste	Plastic knob	13
32 826 00-49092	Achse Knopf	Knob shaft	14
32 827 00-49092	Druckplatte Lift	Oil shaft	15
32 828 00-49092	Achsenhalterung	Press set	17
32 829 00-49092	Liftbügel	Lifter	18
32 830 00-49092	Tonarmhalterung	Tone arm rear set	20
32 831 00-49092	Abdeckhaube	Dust cover	21
32 832 00-49092	Plattenteller kpl.	Platter	22 + 2
32 833 00-49092	Gehäuseboden	Bottom plate	23
32 834 00-49092	Gehäuseoberteil	Panel	24
32 835 00-49092	Lagerhülse	Tone arm shaft set	25
32 836 00-49092	Motorpulley	Capstan	26
32 837 00-49092	Plattentellerlager	Steel plate	28
32 838 00-49092	Haubenscharnier	Steel plate	32
32 839 00-49092	Tonarmrohr	Tone arm tube	33
32 840 00-49092	Stift	Pin	34
32 841 00-49092	Abschaltklinke A	Friction link	35
32 842 00-49092	Abschaltklinke B	Actuating link	36
32 843 00-49092	Gewindeplatte	Fixing plate	37
32 844 00-49092	Massekontakt	Ground sheet	38
32 845 00-49092	Motor kpl.	Motor	39
34 581 00-4991	Magnetsystem	Cartridge magnet	40
34 374 00-4993	Abtastnadel ATN 91	Stylus	41
32 848 00-49092	Nadelschutz	Stylus cover	42
32 850 00-49092	Mikroschalter	Micro switch	44
32 851 00-49092	Verbinderplatine	Connection PCB	47
32 852 00-49092	Schalterplatine Lift kpl.	Switch PCB	48/45
32 853 00-49092	Tonarmleitung	Tonearm wire	49–53
32 854 00-49092	Anschlußkabel	Connector 5 P	54
32 855 00-49092	Frontblende Player	Front panel	65
32 856 00-49092	Zugfeder	Spring	83
32 857 00-49092	Feder Liftbügel	Spring	84
32 858 00-49092	Feder Achse	Spring	85
32 859 00-49092	Liftstange	Pendulum	87
32 860 00-49092	Feder Knopfrastung	Steel cramper	88
32 861 00-49092	Feder Rücksetzhebel	Spring	89
32 862 00-49092	Feder Druckplatte	Spring	90
32 863 00-49092	Antriebsriemen	Belt	91
32 864 00-49092	Gehäusefuß	Rubber foot	93
32 865 00-49092	Plattentellerbelag	Rubber mat	95
32 866 00-49092	Lagerscheibe	Washer	97
32 867 00-49092	Scheibe Klinke	Washer	98
32 868 00-49092	Sicherungsring Teller	E-Ring washer	100
32 869 00-49092	Sicherungsring Klinke	Retaining clip	101
32 870 00-49092	Sicherungsring Lager	Washer	104
32 871 00-49092	Sicherungsring Lager	Washer	105
32 872 00-49092	Kugel	Steel ball	107
32 873 00-49092	Feder Liftstange	Spring	108